GEOPHYSICAL & GEOCHEMICAL REPORT

on the

CD, MO, Cindy Claims

and the

Jenny #101 Fraction

SITUATED IN THE OMINECA MINING DIVISION

1 mile S.E. of the South End of Owen Lake
Central British Columbia

N.T.S 93L/2

Latitude 54°00' N., Longitude 126°40' W.

and owned by

A. L. J. MacDonald
of
Vancouver, B. C.

Field Work between 11 and 19 May
and
18 and 20 September, 1970.

Report by

D. R. Cochrane, P. Eng.
and
R. Forshaw

May 3, 1971.

Vancouver, B. C.

3168

TABLE OF CONTENTS

SUMMARY AND CONCLUSIONS

During portions of May and September, 1970, exploration work, consisting of additional line cutting, geochemical sampling, magnetometer and electromagnetic surveys was completed on sections of the MO and CD claims, located 24 air miles due south of the town of Houston in central B. C. The claims are owned, and work was supervised, by Mr. A. L. J. MacDonald of Vancouver, B. C. Normal access is by truck along a gravel access road leading to Nadina Explorations "Silver Queen" property.

The purpose of the work was to further investigate areas of patchy, but abnormally high, amounts of Cu, Pb, Zn, and Ag discovered in 1969 in the upper "B" soil horizon.

In 1970, a vertical component fluxgate magnetometer survey delineated a northwest trending feature interpreted as a contact between intermediate to basic volcanics to the south and a more monoferromagnetic and homogeneous rock to the north.

Crone JEM Electromagnetic response was entirely "negative, tilt angle degrees" and the broad lows are indicative of horizontal conductivity, probably caused by conductive overburden. Several abnormalities are present, but because of the overall negative response, the exact causes cannot be uniquely determined.

The soil samples were analyzed for copper, lead, zinc, and silver. Soil metal content is considerably higher north of the assumed contact. The amount of copper is close to the normal, crustal average, whereas zinc and lead occur in amounts above that considered normal. Three soil samples contained silver in amounts above 2.5 p.p.m. No widespread coincident anomalies were located, however

four separate points are characterized by anomalous geochemical and/or geophysical change. Investigation as to the cause of these isolated anomalies is recommended.

Respectfully submitted,

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
D. R. COCHRANE

D. R. Cochrane, P. Eng.

R. Forshaw

INTRODUCTION

During the periods between May 11 and May 19, 1970, and September 18 and September 20, 1970, a field crew under the supervision of Mr. A. MacDonald (Sept.) and Mr. R. Forshaw (May), completed approximately 4 line miles of line cutting, soil sampling, magnetometer survey, and approximately one mile of Crone JEM survey on the MO, CD, Cindy and Jenny claims. The purpose of the work was to more fully explore a geochemically anomalous area discovered in 1969.

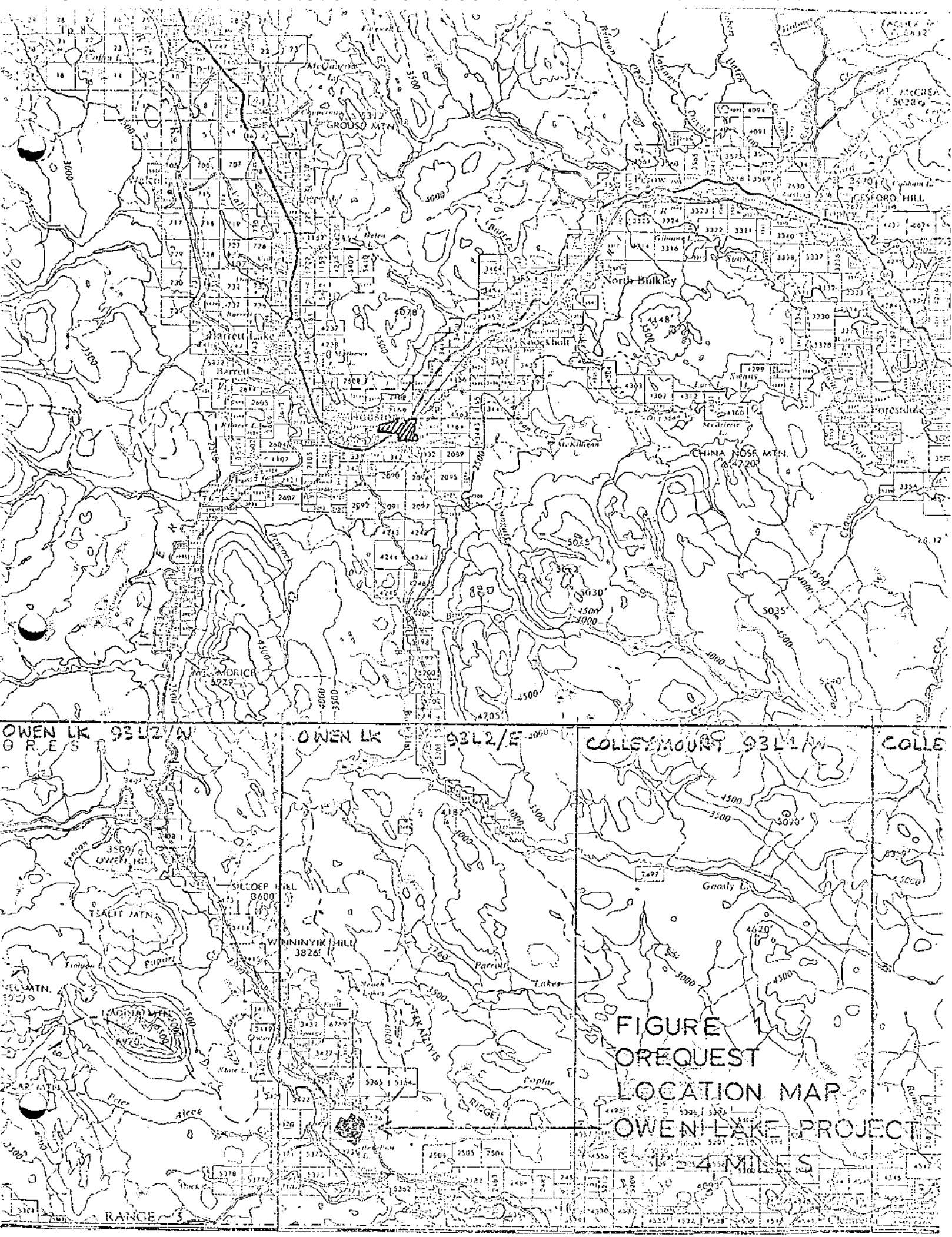
This report describes the field procedures employed in the 1970 work, and discusses the results obtained.

LOCATION AND ACCESS

The claims are situated 24 air miles due south of the town of Houston, B. C., one mile S.E. of the south end of Owen Lake, in the northern interior of British Columbia. Normal access is by motor vehicle from Houston on the Morice River all-weather gravel surface road for a distance of 32 miles. The road bisects the claim group. The National Topographic code is 93 L/2, Lat. 54°00' N., Long. 126°40' W.

CLAIMS AND OWNERSHIP

The MO claims were located by Mr. A. MacDonald of Vancouver, on the 6th of May, 1969; the CD claims were located by Mr. J. J. Tickner as agent for Mr. MacDonald on the same date; the Cindy claims were located by Mr. W. Wiggins as agent for Mr. MacDonald on June 5, 1970; and the Jenny #101 Fr. was located for Mr. MacDonald by Mr. J. Wiggins on June 5, 1970.


OWEN LK 93L2/W
OWEN LK 93L2/E
COLLEY MOUNT 93L1/W
COLLE
GROUSE MTN
North Bulkley
Barrett Lake
Knockholt
CHINA NOSE MTN
MT. MORICE
TSALIT MTN.
WININYIK HILL
3826'
RANGE 5
FIGURE 1
OREQUEST
LOCATION MAP
OWEN LAKE PROJECT
1" = 4 MILES

Claim Name				Record Numbers			
MO 1	to	8	inclusive	70735	to	70742	inclusive
MO 9	to	20	"	70743	to	70754	inclusive
CD 1	to	6	"	70864	to	70869	"
Cindy 1	to	4	"	90278	to	90281	"
Jenny #101 Fr.				90277			

The claims are shown on accompanying Fig. 2.

GENERAL SETTING

The claims are located in the Nechako Plateau subdivision of the Interior Plateau Physiographic Region of British Columbia. The area is a moderately rounded upland with prominences up to 7000' above M.S.L. Locally the surface is less than 5000 feet above sea level.

The geology of the area, as compiled by N. C. Carter and R. V. Kirkham (B.C. Dept. of Mines Map 69.1), shows the claims underlain by a Lower(?) Middle Jurassic volcanic sequence composed of andesite, rhyolite, tuffs and breccias; and unconformably overlain by patches of tertiary andesite and basalt. This section of British Columbia was occupied by Pleistocene ice, and a moderately thick glacial till sheet covers much of the lowland surface. There is a relatively thin mantle of drift at higher elevations. Approximately four claims are covered by swamp, presumably a remnant of glacial Lake Owen.

FIELD PROCEDURES

(1) Line cutting

Ground control lines were cut with axes and power saws and were picketed, chained, and flagged every 100 feet. The prime control line was Base Line 24E, cut in 1969. The cross lines were cut at right angles to this central line and at an

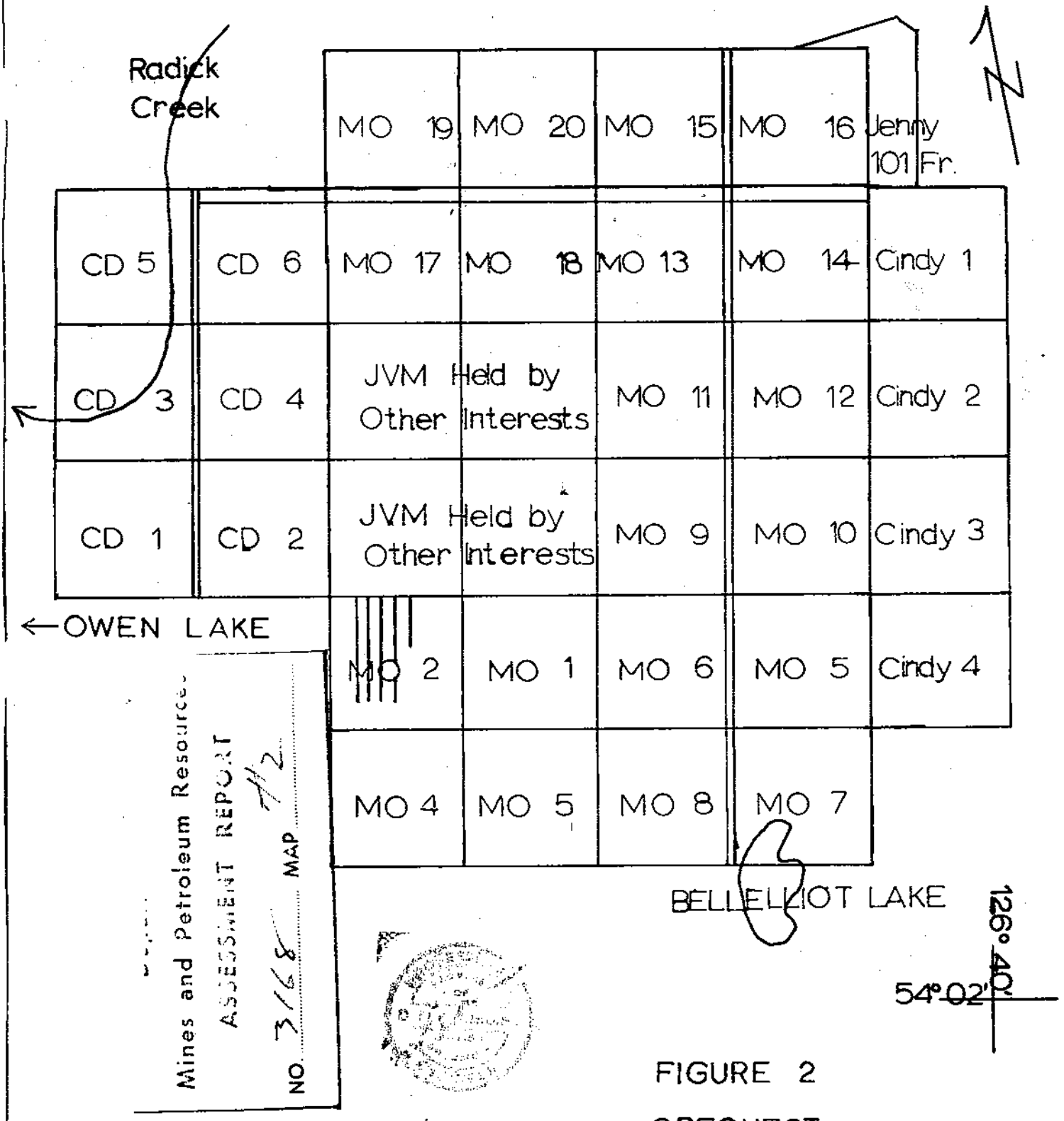


FIGURE 2

OREQUEST

CLAIM SKETCH

OWEN LAKE PROJECT

1" = 1500'

Dated: May 3, 1971

To accompany geochemical and geophysical report on the MO, CD, Cindy, and Jenny claims, Omineca M.D.

by D.R. Cochrane, P.Eng.

azmuth of 060° (true). Messrs. Essex, W. Wiggins, J. Wiggins, Hutton and Forshaw established the grid. In the northeast property sector, cross lines were spaced 400' apart, and are 1500 and 3000 feet long.

(2) Soil Sampling

Geochemical soil samples were collected by Messrs. Hutton, W. Wiggins, J. Wiggins, and Essex from the "B" soil horizon at a depth normally not exceeding 12 inches from the surface. A sample of approx. 200 grams was placed in a standard, kraft paper, water resistant, geochemical bag. Samples were collected at 100 foot intervals along cross lines and the samples were numbered with reference to station and line co-ordinates. Field notes describing the depth, soil horizon, texture and pertinent remarks were kept by the samplers. The samples, bagged in cardboard boxes, were shipped to Vancouver Geochemical Laboratories, Ltd., 1521 Pemberton Avenue. The laboratory oven-dried and screened the samples (-80 mesh) in Vancouver. The analytical procedure is appended.

(3) Magnetometer Survey

The magnetometer survey was completed by Mr. Forshaw (certificate appended) employing a Sharpe MF-2 unit (instrument specifications appended). The magnetometer was calibrated at zero gammas at a base station located 2 miles north of the property on the access road. Mr. Forshaw checked into this base station in the morning and night. A subsidiary base station was established at 24E 86N. All lines were surveyed in "loop" form, readings at 100' intervals along the control

grid. The line, station, time, scale, reading and remarks were recorded on standard field note forms. The field readings were corrected on a linearly extrapolated time-gamma drift chart. The largest correction for one day was 50 gammas. The corrected magnetometer values are displayed in Fig. 5 accompanying this report.

(4) Electromagnetic Survey

A Crone dual frequency electromagnetic unit was used to survey lines 90N, 98N, and 102N. The instrument specifications are listed in Appendix V. The two operators, each with a unit, faced each other along the same line and at a separation of 200 feet. The operators alternately transmitted and received, (each unit is a transmitting-receiving unit) and the final result is the algebraic sum of two operator's readings. The process was repeated at each station using 480 c.p.s. and 1800 c.p.s. transmitting frequencies. The final results were plotted midway between the two men's field positions. The field results were recorded by the "chief" on standard EM note forms. At each position two dip angles (on each frequency) were recorded, in addition to the station number, remarks, and information on null width (when applicable).

DISCUSSION OF RESULTS

(1) Soil Sampling

Soil samples were analyzed for copper, lead, zinc and silver and the results, in parts per million (p.p.m.) are presented in Figs. 3 and 4 (map pocket).

The following table lists the pertinent geochemical statistics:

Metal	Minimum (ppm)	Maximum (ppm)	Arithmetic average	Approximate threshold*	No. above threshold
Copper	8	150	21.5	40	9
Lead	15	135	30.0	95	1
Zinc	55	780	300	530	19
Silver	<0.5	5.5	~1	2.5	3

* Determined statistically, 1969.

The above averages compare well with the statistics on the samples collected in the summer of 1969. (See Assessment Report entitled "Geochemical Report on the MO and CD Claim Group", by D. R. Cochrane, P. Eng., and dated Nov. 25, 1969.)

Based on averages reported by Haekes and Webb (Geochemistry in Mineral Exploration, Harper and Row, N.Y.), the CD and MO claim soils may be classed as very zinc rich, and slightly lead rich (Hawkes and Webb's averages, 50 and 10 respectively).

There is an overall general enrichment in metals in the soil, from SW to NE, across the claim group. The zinc content, for example, averaged 188 ppm on lines 54 and 58N; and rose to an average value of 350 ppm on lines 90, 94, 98 and 102N.

The most interesting individual sample is situated at 38E on line 98N, where the following values were recorded: Ag, 5.5; Zn, 760; Cu, 150 and Pb, 30 ppm. A lead high of 135 ppm is located on the same line, some 600 feet to the

east of the above described position. There is a suggestion of a N-S trend to this anomaly. A similar "kick", (although slightly lower) is present at 19E on line 82N.

(2) Magnetics

The isomagnetic plan accompanies this report as Fig. 5. Magnetometer values ranged from a low of -1750 to a high of +2950 gammas. There is a marked contrast in magnetic response along a line designated A-A' trending NW across the area surveyed. North and east of boundary A-A', isomagnetic trends are predominantly northeasterly, and response is predominantly negative. Magnetic relief is fairly gentle in this sector. South and west of boundary A-A', isomagnetic trends are northerly, response is entirely positive, and there is considerable magnetic relief. The two magnetic divisions, therefore, most probably represent different rock types. The northern sector is a monolithic variety, and the birds-eye pattern to the south is indicative of intermediate/basic volcanic varieties of bedrock.

(3) Electromagnetics

Dual frequency EM profiles accompany this report as Fig. 6. High frequency (1800 cps) tilt angle response ranged from a minimum of -13° to a maximum of -1°; and 480 cps response ranged from a minimum to -8° to a maximum of -1°. The majority of tilt angles are less than -4° and the profiles show broad negatives on all lines surveyed. This type of response may be interpreted as

a horizontal conductor, and the rather low 480 to 1800 cps ratios indicate only poor to moderate conductivity in most areas. The negative response is probably due to conductive overburden. A sharp negative, occurring at 24E on line 90N, is nearly coincident with magnetic boundary A-A' and possibly more accurately delineates the assumed contact. Several peaks within the normally low response are worthy of note, however interpretation is difficult. The peaks may simply represent less conductive segments of the conductive surface sheet, or they may indicate conductive bands situated beneath the near surface conductor. The most apparent peak is situated at 32E on line 98N; and may represent a narrow conductor dipping to the east. A second peak, on the same line, occurs at 37E. Other "crossovers" are shown in Fig. 6.

(4) Correlation of Data

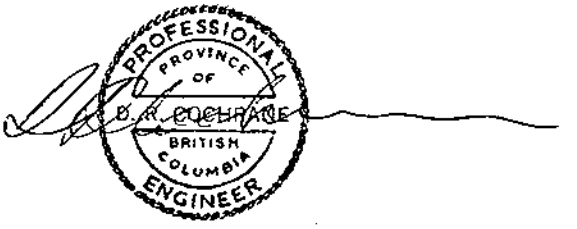
Geochemical and magnetic data indicates a change in bedrock lithology along a boundary designated A-A' and trending NW through a point close to 24E; 90N. Intermediate to basic volcanics are suspected to overlie "basement" rock to the south and west of this boundary. This geologic feature would inhibit geochemical response and "mask" buried mineral occurences. Although there are no widespread coincidentally anomalous areas there are separated points of interest; a description follows.

Area	Station	Line	Description EM change ↙	Mag change ↙	Cu	Ag	Pb	Zn
1	37-38E	98N	Yes	No	150	5.5	35	760
2	32E	98N	Yes	No	16	1	135	290
3	30E	102N	Yes	Yes	15	1.5	30	780
4	37E	90N	Yes	slight	18	0.5	24	565

In view of the proximity of these abnormal points to Nadina Explorations Silver Queen property, investigation as to their cause is recommended.

Respectfully submitted,

D. R. Cochrane, P. Eng.



R. Forshaw

CERTIFICATES

MacDonald, A. B.A. (Geology), P. Eng. Engaged in mineral exploration since 1955 while employed by Torwest Mining, United Keno Hill, Peso Silver, Kerr Addison, New Jersey Zinc, Manager of Meridian Exploration Syndicate and Orequest Syndicate.

Forshaw, R.T. Age 23. High School diploma; Grade 13 (Oliver). Previous experience in mineral exploration with: The Granby Mining Co. Ltd., April 1967 to June 1969 supervising and cutting lines, magnetometer operator, claim staking and surveying (transit and level). Huntec Ltd. Induced Polarization operator and helper. San Jacinto Mines, line setter and I.P. helper. James Forshaw Ltd., claim staking and line cutting. Employed by Orequest starting July 1, 1969. Magnetometer operator and field supervisor, working under professional supervision.

Hutton, J.A. Instrument operator. Age 21. 3 years geophysics (U.B.C.) Employed by Orequest in May 1970 as an instrument operator and soil sampler.

Wiggins, W.E. Soil sampler, line cutter. Age 21. Has been employed since June 1, 1969 as a soil sampler and driller by Granduc Mines Ltd. Employed as a soil sampler and line cutter by Orequest Exploration since April 1970.

Essex, D.A. Line cutter. Age 20. Has been employed as a prospector by Direct Development Ltd., and as an assistant by the B.C. Forest Service (Engineering Department). Employed by Orequest Syndicate as a line cutter, soil sampler since April 1970.

Scott, A. B.Sc. (Geophysics) U.B.C. 1970. Has been employed in various types of geophysical prospecting for the last three years, as an operator for Geo-X Surveys, Ltd., and as an operator and geophysicist for D.R. Cochrane, P. Eng.

Wiggins, J. Age 22. Has been employed for the last year by Orequest as a line cutter and soil sampler. Previous experience in all phases of exploration with Geo-X, Mammit Lake Mines, Jerico Mines, and South Seas Mines.

Cochrane, D.R. M.Sc., P. Eng. Geological Engineer. Engaged in mineral exploration since 1962 while employed with U.S. Steel, Noranda Exploration, Meridian Syndicate Geo-X Surveys. Experience in Canada, U.S.A., West Indies, Latin and South America.

PERSONNEL AND DATES WORKED

Name	Occupation	Dates Worked 1970	Man Days
R. Forshaw	Mag. Survey	May 12-18	7
	E.M. Survey	Sept. 18	1
J. R. Wiggins	Line cutting)	May 12-18	4
	Soil sampling)		3
J. A. Hutton	Line cutting)	May 12-18	4
	Soil sampling)		3
W. Wiggins	Line cutting)	May 12-18	4
	Soil sampling)		3
D. Essex	Line cutting)	May 12-18	4
	Soil sampling)		3
A. L. J. MacDonald	Supervision	Sept. 18-20	3
A. Scott	E.M. Survey	Sept. 18	1

GEOCHEMICAL ANALYTICAL PROCEDURE

1. Sample Preparation

a) Geochemical soil, silt and rock samples were received in the laboratory in wet-strength 3½ x 6½ Kraft Paper bags.

b) The wet samples were dried in a ventilated oven.

c) The dried soil and silt samples were sifted, using an 80-mesh stainless steel sieve. The plus 80-mesh fraction was rejected and the minus 80-mesh fraction was transferred into a new bag for analysis later.

d) The dried rock samples were crushed and pulverized to minus 80-mesh. The pulverized sample was then put in new bag for later analysis.

2. Methods of Digestion

a) 1.00 gram or 0.50 gram of the minus 80-mesh samples was used. Samples were weighed out by using a top-loading balance.

b) Samples were heated in a sand bath with nitric and perchloric acids (15% to 85% by volume of the concentrated acids respectively).

c) The digested samples were diluted with demineralized water to a fixed volume and shaken.

3. Methods of Analyses

a) Molybdenum analyses:
Molybdenum analyses were determined by using a Techtron Atomic Absorption Spectrophotometer Model AA4 with a molybdenum hollow cathode lamp. The digested samples were aspirated directly into a nitrous oxide, acetylene flame. The results were read out on a Photovolt Varicord Model 43 chart recorder. The molybdenum values, in parts per million, were calculated by comparing a set of molybdenum standards.

b) Copper, zinc, silver and lead analyses:
The above element analyses were determined by using a Techtron Atomic Absorption Spectrophotometer Model AA4 or Model AA5 with their respective hollow cathode lamp. The digested samples were aspirated directly into an air acetylene flame. The results, in parts per million, were cale

culated by comparing a set of standards to calibrate the atomic absorption unit.

4. The analyses were supervised or determined by Mr. Conway Chun, or Mr. Laurie Nicol and their laboratory staff.

FLUXGATE MAGNETOMETER MF-2 -- Specifications

	Ranges	Sensitivity
Standard:	Plus or minus	
	1,000 gammas f.sc.	20 gammas/div.
	3,000 gammas f.sc.	50 gammas/div.
	10,000 gammas f.sc.	200 gammas/div.
	30,000 gammas f.sc.	500 gammas/div.
	100,000 gammas f.sc.	2,000 gammas/div.
Optional:	100 gammas f.sc.	2 gammas/div.
	300 gammas f.sc.	5 gammas/div.

Meter: Taut-band suspension
100 gamma scale 2.1" long--50 div.
300 gamma scale 1.9" long--60 div.

Accuracy: 1000 to 10,000 gamma ranges ± 0.5% of full scale

Operating Temperature: -40°C. to +40°C.
-40°F. to +100°F.

Temperature Coefficient: Less than 1 gamma per °C.
(½ gamma/°F.)

Noise Level: Less than 1 gamma P-P

Bucking Adjustments: (Latitude)
-20,000 to +80,000 gammas
9 steps of 10,000 gammas plus fine control of 0-10,000 gammas by ten turn potentiometer
Reversible for southern hemisphere

Recording Output: Optional

Electrical Response: D.C. to 0.3 cps (3db down) on 100 gamma range with meter in circuit.
D.C. to 20 cps with meter network shorted for recording purposes

Connector: Cannon KO2-16-10SN
for plug Cannon KO3-16-10PN and cover KO6-16-3/8

Batteries:	Internal 3 x 6V-1 amp/hr. Sealed Lead Acid rechargeable Centralab GC 6101; recharge time 8 hrs.
Consumption:	60 milliamperes--GC 6101 batteries are rated for 16 hours continuous use
Dimensions:	6 1/4" x 2 3/4" x 10" instrument 161 mm x 71 mm x 254 mmm
Weights:	5 lb. 8 oz.--2.5 kg.
Battery Charger:	6" x 2 1/2" x 2 1/2" 155 mm x 64 mm x 65 mm 110V-220V 50/60 Hz supply or 28V-42V D.C. supply automatic charge rate and cutoff preset for Centralab GC 6101 batteries.

CRONE EM UNIT -- Specifications

Standard Unit	Massive Sulphide Exploration 480/1800 c.p.s.
Readout	Dip angle from inclinometer -½
Null Indicator	Audio through crystal earphones
Weight	Per man each transceiver unit--15 lb. Shipping weight including 2 spare batteries--55 lb.
Range	non-conductive overburden 1° wide null at 300' non-conductive overburden 15° wide null at 500'
Battery Power	Normal 12 volt--TW-2 Burgess; 732 Eveready, M-919 Mallory Hi power 18 volt-- 3 of 6 volt F4BP Burgess and Adaptor Battery Life--2 weeks to 1 month Receiver--1.4 volt mercury RM1R --life 1 year

APPENDIX VI

COST BREAKDOWN

A.	Physical Work	
	i) Percussion drilling	$2145.93
	ii) Supervision - A. L. J. MacDonald - 3 man days at $75/man day	225.00
B.	Geochemical Survey	
	i) 12 man days at $35/man day	420.00
	ii) Analysis - 188 samples	507.60
C.	Geophysics	
	i) Magnetometer Survey - 7 man days at $45/man day	315.00
	ii) E.M. Survey - 2 man days at $47.50/man day	95.00
D.	Linecutting	
	i) 16 man days at $30/man day	480.00
E.	General	
	i) Board loss - 39 man days at $10/man day	390.00
	ii) Report preparation	
	a) Forshaw - 2 days at $45/day	90.00
	b) Cochrane - 3 days at $110/day	330.00
		$4927.53

BL

24E 28E 32E 36E 40E

102 N

98 N

94 N

90 N

MO 16 CLAIM

—o— High frequency

---x--- Low " "

To accompany geochemical and geophysical report on the MO, CD, Cindy, and Jenny Claims, Omineca M.D. by D. R. Cochrane P. Eng. Dated: May 3, 1971

0 200 400 600 800 1" = 200' 1" = 10°

FIGURE 6
OREQUEST
CRONE J-E M PROFILES
OWEN LAKE PROJECT

B L

24W 0 8E 12E 16E 20E B L 24E 28E 32E 36E 40E

102 N
98 N
94 N
90 N
86 N
82 N
78 N
74 N
58 N
54 N
50 N
40 N

MO 19 MO 20 MO 15 MO 16 JENNY 101 FR.

CD 5 CD 6 MO 17 MO 18 MO 13 MO 14 CINDY 1

CD 3 CD 4 MO 11 MO 12 CINDY 2

CLAIMS HELD BY
OTHER INTERESTS

CD 1 CD 2 MO 9 MO 10 CINDY 3

36W 32W 28W 24 W

MO 2 MO 1 MO6 MO 5 CINDY 4

14W

MO 4 MO 3 MO 8 MO 7

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3168 MAP #4

FIGURE 4

OWEN LAKE PROJECT

OREQUEST
GEO-CHEM RESULTS
P.P.M. Ag / Zn
1969 GRID
1970 GRID

1" = 400'

TO ACCOMPANY GEOCHEMICAL AND GEOPHYSICAL REPORT
ON THE MO, CD, CINDY, AND JENNY CLAIMS, OMINECA M.D.
BY D.R. COCHRANE P.ENG. DATED: May 3, 1971

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. R. COCHRANE

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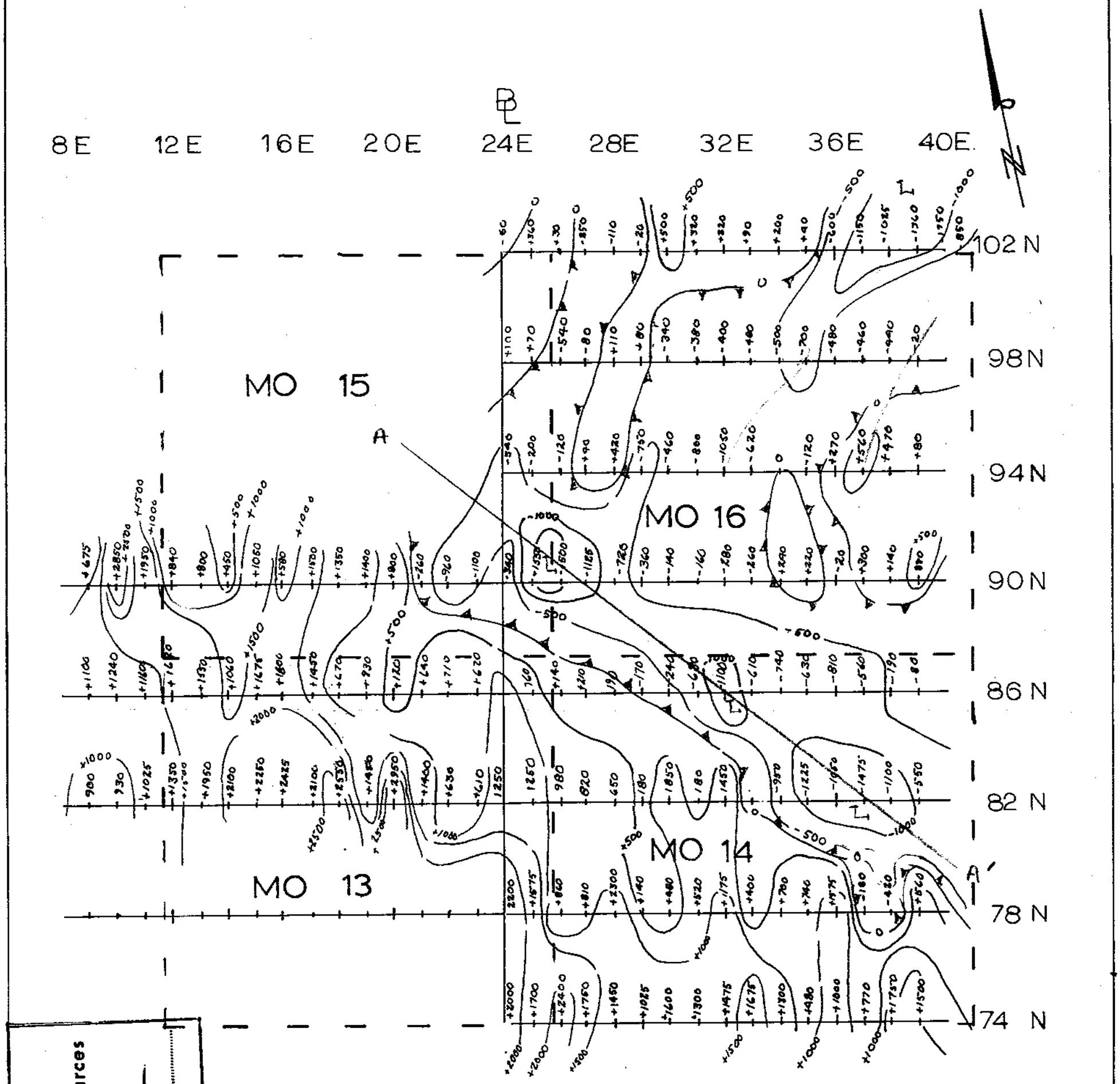

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by D.R. Cochrane P.Eng. May 3, 1971 1"= 400'

0 100' 200' 300' 400'

FIGURE 5
OREQUEST
ISOMAGNETIC PLAN
OWEN LAKE PROJECT

FIGURE 3

3168

M-3

OWEN LAKE PROJECT

OREQUEST
GEO-CHEM RESULTS
P.P.M. Cu / Pb

1969 GRID
1970 GRID

1"= 400'

TO ACCOMPANY GEOCHEMICAL AND GEOPHYSICAL REPORT
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0 100 200 300 400

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